DIPE 403

SEQUENCE LISTING

0> Hawiger, Daniel
 Steinman, Ralph
 Nussenzweig, Michel

<120> Enhanced Antigen Delivery and Modulation of the Immune System Therefrom

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<141> 2001-08-09
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<151> 2000-06-05
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<151> 1995-01-31
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acatgatagg c
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tgtgctacc
                                                                   69
<210> 7
<211> 30
<212> PRT
<213> Homo sapiens
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Arg His Arg Leu His Leu Ala Gly Phe Ser Ser Val Arg Tyr Ala Gln
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Gly Val Asn Glu Asp Glu Ile Met Leu Pro Ser Phe His Asp
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Gly Lys Cys Ile Gln Pro Leu Phe Asp
            20
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Ser Glu Ser Ser Gly Asn Asp Pro Phe Thr Ile Val His Glu Asn Thr
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Gly Lys Cys
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Met Arg Thr Gly Arg Val Thr Pro Gly Leu Ala Ala Gly Leu Leu Leu
                5
                                    10
Leu Leu Arg Ser Phe Gly Leu Val Glu Pro Ser Glu Ser Ser Gly
                                25
Asn Asp Pro Phe Thr Ile Val His Glu Asn Thr Gly Lys Cys Ile Gln
                            40
Pro Leu Ser Asp Trp Val Val Ala Gln Asp Cys Ser Gly Thr Asn Asn
                        55
Met Leu Trp Lys Trp Val Ser Gln His Arg Leu Phe His Leu Glu Ser
                    70
Gln Lys Cys Leu Gly Leu Asp Ile Thr Lys Ala Thr Asp Asn Leu Arg
                                    90
Met Phe Ser Cys Asp Ser Thr Val Met Leu Trp Trp Lys Cys Glu His
                                105
His Ser Leu Tyr Thr Ala Ala Gln Tyr Arg Leu Ala Leu Lys Asp Gly
                            120
Tyr Ala Val Ala Asn Thr Asn Thr Ser Asp Val Trp Lys Lys Gly Gly
                       135
                                            140
Ser Glu Glu Asn Leu Cys Ala Gln Pro Tyr His Glu Ile Tyr Thr Arg
                   150
                                        155
Asp Gly Asn Ser Tyr Gly Arg Pro Cys Glu Phe Pro Phe Leu Ile Gly
                165
                                    170
Glu Thr Trp Tyr His Asp Cys Ile His Asp Glu Asp His Ser Gly Pro
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<220>

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	Trp	Cys	Ala 195		Thr	Leu	Ser	Tyr 200			Asp	Gln	Lys 205		Gly	Ile
-	Cys	Leu 210	Leu	Pro	Glu	Ser	Gly 215	Суѕ	Glu	Gly	Asn	Trp 220	Glu	Lys	Asn	Glu
	Gln 225	Ile	Gly	Ser	Суѕ	Tyr 230	Gln	Phe	Asn	Asn	Gln 235	Glu	Ile	Leu	Ser	Trp 240
	Lys	Glu	Ala	Tyr	Val 245	Ser	Суз	Gln	Asn	Gln 250	Gly	Ala	Asp	Leu	Leu 255	
•	Ile	His	Ser	Ala 260	Ala	Glu	Leu	Ala	Tyr 265	Ile	Thr	Gly	Lys	Glu 270		Ile
	Ala	Arg	Leu 275	Val	Trp	Leu	Gly	Leu 280	Asn	Gln	Leu	Tyr	Ser 285	Ala	Arg	Gly
	Trp	Glu 290	Trp	Ser	Asp	Phe	Arg 295	Pro	Leu	Lys	Phe	Leu 300	Asn	Trp	Asp	Pro
	305					310					315	Ser				320
	Asp	Thr	Glu	Ser	Gly 325	Leu	Trp	Gln	Ser	Val 330	Ser	Cys	Glu	Ser	Gln 335	
				340					345			Leu		350		_
			355					360				Gly	365			
		370					375					Ser 380				
	385					390					395	Leu				400
					405					410		Leu			415	
				420					425			Thr		430		
			435					440				Leu	445		_	
		450					455					Pro 460				
	465					470					475	Ser			_	480
					485					490		Thr			495	
				500					505			Lys		510		
			515					520				Phe	525			_
		530					535					Phe 540				
	545					550					555	Phe				560
					565					570		Ala			575	
				580					585			Phe		590		
			595					600				Lys	605			
		610					615					Leu 620				
	Lys 625	Val	Ser	Glu	Pro	Gln 630	Glu	Pro	Glu	Glu	Ala 635	Ala	Pro	Lys	Pro	Asp 640

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Asp Pro Cys Pro Glu Gly Trp His Thr Phe Pro Ser Ser Leu Ser Cys
                645
                                    650
Tyr Lys Val Phe His Ile Glu Arg Ile Val Arg Lys Arg Asn Trp Glu
            660
                                665
Glu Ala Glu Arg Phe Cys Gln Ala Leu Gly Ala His Leu Pro Ser Phe
        675
                           680
Ser Arg Arg Glu Glu Ile Lys Asp Phe Val His Leu Leu Lys Asp Gln
                        695
Phe Ser Gly Gln Arg Trp Leu Trp Ile Gly Leu Asn Lys Arg Ser Pro
                    710
                                        715
Asp Leu Gln Gly Ser Trp Gln Trp Ser Asp Arg Thr Pro Val Ser Ala
               725
                                    730
Val Met Met Glu Pro Glu Phe Gln Gln Asp Phe Asp Ile Arg Asp Cys
                                745
Ala Ala Ile Lys Val Leu Asp Val Pro Trp Arg Arg Val Trp His Leu
                            760
                                                765
Tyr Glu Asp Lys Asp Tyr Ala Tyr Trp Lys Pro Phe Ala Cys Asp Ala
                       775
Lys Leu Glu Trp Val Cys Gln Ile Pro Lys Gly Ser Thr Pro Gln Met
                    790
                                        795
Pro Asp Trp Tyr Asn Pro Glu Arg Thr Gly Ile His Gly Pro Pro Val
                805
                                    810
Ile Ile Glu Gly Ser Glu Tyr Trp Phe Val Ala Asp Pro His Leu Asn
           820
                               825
Tyr Glu Glu Ala Val Leu Tyr Cys Ala Ser Asn His Ser Phe Leu Ala
       835
                           840
Thr Ile Thr Ser Phe Thr Gly Leu Lys Ala Ile Lys Asn Lys Leu Ala
                       855
                                           860
Asn Ile Ser Gly Glu Glu Gln Lys Trp Trp Val Lys Thr Ser Glu Asn
                   870
                                        875
Pro Ile Asp Arg Tyr Phe Leu Gly Ser Arg Arg Arg Leu Trp His His
                885
                                    890
Phe Pro Met Thr Phe Gly Asp Glu Cys Leu His Met Ser Ala Lys Thr
                                905
Trp Leu Val Asp Leu Ser Lys Arg Ala Asp Cys Asn Ala Lys Leu Pro
                           920
Phe Ile Cys Glu Arg Tyr Asn Val Ser Ser Leu Glu Lys Tyr Ser Pro
                       935
                                            940
Asp Pro Ala Ala Lys Val Gln Cys Thr Glu Lys Trp Ile Pro Phe Gln
                   950
                                        955
Asn Lys Cys Phe Leu Lys Val Asn Ser Gly Pro Val Thr Phe Ser Gln
                965
                                    970
Ala Ser Gly Ile Cys His Ser Tyr Gly Gly Thr Leu Pro Ser Val Leu
            980
                                985
Ser Arg Gly Glu Gln Asp Phe Ile Ile Ser Leu Leu Pro Glu Met Glu
                            1000
                                               1005
Ala Ser Leu Trp Ile Gly Leu Arg Trp Thr Ala Tyr Glu Arg Ile Asn
                       1015
                                            1020
Arg Trp Thr Asp Asn Arg Glu Leu Thr Tyr Ser Asn Phe His Pro Leu
                   1030
                                       1035
Leu Val Gly Arg Arg Leu Ser Ile Pro Thr Asn Phe Phe Asp Asp Glu
               1045
                                   1050
Ser His Phe His Cys Ala Leu Ile Leu Asn Leu Lys Lys Ser Pro Leu
           1060
                               1065
Thr Gly Thr Trp Asn Phe Thr Ser Cys Ser Glu Arg His Ser Leu Ser
                            1080
Leu Cys Gln Lys Tyr Ser Glu Thr Glu Asp Gly Gln Pro Trp Glu Asn
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Thr Ser Lys Thr Val Lys Tyr Leu Asn Asn Leu Tyr Lys Ile Ile Ser Lys Pro Leu Thr Trp His Gly Ala Leu Lys Glu Cys Met Lys Glu Lys Met Arg Leu Val Ser Ile Thr Asp Pro Tyr Gln Gln Ala Phe Leu Ala Val Gln Ala Thr Leu Arg Asn Ser Ser Phe Trp Ile Gly Leu Ser Ser Gln Asp Asp Glu Leu Asn Phe Gly Trp Ser Asp Gly Lys Arg Leu Gln Phe Ser Asn Trp Ala Gly Ser Asn Glu Gln Leu Asp Asp Cys Val Ile Leu Asp Thr Asp Gly Phe Trp Lys Thr Ala Asp Cys Asp Asp Asn Gln Pro Gly Ala Ile Cys Tyr Tyr Pro Gly Asn Glu Thr Glu Glu Val Arg Ala Leu Asp Thr Ala Lys Cys Pro Ser Pro Val Gln Ser Thr Pro Trp Ile Pro Phe Gln Asn Ser Cys Tyr Asn Phe Met Ile Thr Asn Asn Arg His Lys Thr Val Thr Pro Glu Glu Val Gln Ser Thr Cys Glu Lys Leu His Pro Lys Ala His Ser Leu Ser Ile Arg Asn Glu Glu Asn Thr Phe Val Val Glu Gln Leu Leu Tyr Phe Asn Tyr Ile Ala Ser Trp Val Met Leu Gly Ile Thr Tyr Glu Asn Asn Ser Leu Met Trp Phe Asp Lys Thr Ala Leu Ser Tyr Thr His Trp Arg Thr Gly Arg Pro Thr Val Lys Asn Gly Lys Phe Leu Ala Gly Leu Ser Thr Asp Gly Phe Trp Asp Ile Gln Ser Phe Asn Val Ile Glu Glu Thr Leu His Phe Tyr Gln His Ser Ile Ser Ala Cys Lys Ile Glu Met Val Asp Tyr Glu Asp Lys His Asn Gly Thr Leu Pro Gln Phe Ile Pro Tyr Lys Asp Gly Val Tyr Ser Val Ile Gln Lys Lys Val Thr Trp Tyr Glu Ala Leu Asn Ala Cys Ser Gln Ser Gly Glu Leu Ala Ser Val His Asn Pro Asn Gly Lys Leu Phe Leu Glu Asp Ile Val Asn Arg Asp Gly Phe Pro Leu Trp Val Gly Leu Ser Ser His Asp Gly Ser Glu Ser Ser Phe Glu Trp Ser Asp Gly Arg Ala Phe Asp Tyr Val Pro Trp Gln Ser Leu Gln Ser Pro Gly Asp Cys Val Val Leu Tyr Pro Lys Gly Ile Trp Arg Arg Glu Lys Cys Leu Ser Val Lys Asp Gly Ala Ile Cys Tyr Lys Pro Thr Lys Asp Lys Lys Leu Ile Phe His Val Lys Ser Ser Lys Cys Pro Val Ala Lys Arg Asp Gly Pro Gln Trp Val Gln Tyr Gly Gly His Cys Tyr Ala Ser Asp Gln

		Ser Glu		Gln Val		Glu Leu Asp					
15	-		1560		1569						
	a Thr Val	Val Thr	Ile Ala	Asp Glu	Asn Glu	Asn Lys Phe					
1570		157	5		1580						
Val Ser Ar	g Leu Met	Arg Glu	Asn Tyr	Asn Ile	Thr Met	Arg Val Trp					
1585		1590		159	5	1600	,				
Leu Gly Le	ı Ser Gln	His Ser	Leu Asp	Gln Ser	Trp Ser	Trp Leu Asp					
	160			1610		1615					
Gly Leu As	o Val Thr	Phe Val	Lys Trp	Glu Asn	Lys Thr	Lys Asp Gly					
	1620		162	5		1630					
Asp Gly Ly	s Cys Ser	Ile Leu	Ile Ala	Ser Asn	Glu Thr	Trp Arg Lys					
16	35		1640		1645						
Val His Cy	s Ser Arg	Gly Tyr	Ala Arg	Ala Val	Cys Lys	Ile Pro Leu					
1650		165	5	1660							
Ser Pro As	Tyr Thr	Gly Ile	Ala Ile	Leu Phe	Ala Val	Leu Cys Leu					
1665		1670		167	5	1680					
Leu Gly Le	ı Ile Ser	Leu Ala	Ile Trp	Phe Leu	Leu Gln	Arg Ser His					
	168	5		1690		1695	1695				
Ile Arg Tr	Thr Gly	Phe Ser	Ser Val	Arg Tyr	Glu His	Gly Thr Asn					
	1700		170	5		1710	C				
Glu Asp Gl	ม Val Met	Leu Pro	Ser Phe	His Asp							
17			1500	1720							
	1.5		1/20								